# Lean Initiatives
## (Program Level)

- **Lean Initiatives**
  - Lean is a concept of getting the right things to the right place at the right time, while minimizing waste
  - It was documented by researchers from Massachusetts Institute of Technology in the book The Machine That Changed The World
  - In 1993, the Air Force and MIT applied the lean concept to the aerospace community and started the Lean Aerospace Initiative (LAI)

# Lean Aerospace Initiative (LAI) History

**1993 Lean Aircraft Initiative begins Phase I**

**1994 DLA/DCMC joins Lean Aircraft Initiative**

**1996 LAI begins Phase II**

**1997 LAI expands to Lean Aerospace Initiative**

- **Space sector included in LAI**

**1998 LAI includes international collaborations**

**1999 LAI to begin Phase III**

# Government Consortium Members

U.S. Department of the Air Force, Aeronautical Systems Center
U.S. Department of the Air Force, Space and Missile Command (SMC)
C-17 Systems Program Office
F-22 Systems Program Office
Joint Strike Fighter Systems Program
Training System Program Office (JPATS)
NASA, Office of Safety and Mission Assurance
National Reconnaissance Organization (NRO); Mr. Cecil Rosen
U.S. Department of the Army, U.S.Army Aviation and Missile Command (AMCOM)
U.S. Department of Defense, Office of the Under Secretary of Defense, (A&T)
U.S. Department of Defense, Defense Advanced Research Projects Agency (DARPA)
U.S. Department of Defense, Defense Logistics Agency (DLA)
U.S. Department of the Navy, Naval Air Systems Command (NAVAIR)

# Industry Consortium Members

- Applied Materials
- The Boeing Company, Seattle, St. Louis
- Boeing Space Transportation
- Aerojet General Corporation
- General Electric Aircraft Engines
- Hewlett Packard
- Hughes Space and Communications
- Lockheed Martin Aeronautical Systems
- Lockheed Martin Electronics & Missiles
- Lockheed Martin Space & Missiles
- Northrop Grumman Corporation
- Northrop Grumman Corporation
- Pratt & Whitney (United Technologies )
- Pratt & Whitney Space Propulsion
- Raytheon Aircraft Corp. (Raytheon Co.)
- Raytheon Systems Company
- Rockwell Collins, Inc.
- Rolls Royce Allison
- Sundstrand Corp.
- Textron Systems Division (Textron, Inc.)
- TRW Inc.

# Invited Participants

Labor:

International Union United Automobile, Aerospace & Agricultural Implement Workers of America (UAW)

Government:

Defense Systems Management College (DSMC)
Institute for Defense Analyses (IDA)

Ballistic Missile Defense Office (BMDO)

Industry Associations:

Aerospace Industries Association

Universities:

Wharton School, University of Pennsylvania
University of Chicago
University of Washington

International Collaborations:

University of Linkoping
UK LAI

# LAI Phase III Vision

**“to deliver military aerospace**
**ucts at significantly reduced costs and cycle ti**
**while meeting or exceeding**
**performance expectations and enhancing the**
**effectiveness of our national workforce”**

# LAI Phase III Mission

**“to enable fundamental change within**
**dustry and government operations that suppor**
**e continuing transformation of the US aerospa**
**enterprise towards providing**
**erospace systems offering best life-cycle value**

# LAI Phase III
# (Partial Program Structure)

## Research Teams

Manufacturing Systems
Product Development
Supplier Networks
Organizations & People
Test & Space Operations
Lifecycle Acquisition

## Product Teams

Lean Enterprise Model
Knowledge Deployment
Policy

## Sector Focus

Airframe
Avionics/Missiles
Space
Propulsion

# Lean Enterprise Model

**The Lean Enterprise Model (LEM) is a systematic framework for organizing and disseminating the research results of the Lean Aerospace Initiative (LAI).**

**It encompasses lean enterprise principles and practices and is populated by research-based benchmarking data derived from surveys, case studies and other research activities.**

**The LEM is available to all LAI consortium members as a reference to help them better understand the leanness of their own organizations and processes.**

**It is intended to provide insights as to where**

# Lean Initiatives
## (Program Level)

- **DCMC Engineering Role**
  - Be familiar with LAI and how to access research results and use the Lean Enterprise Model to help assess risk and formulate risk handling plans
  - Be familiar with lean/best practices and current process improvement techniques
  - Be aware of opportunities to employ lean practices